

FIG. 1

| | Coating Amount (Parts by Wt.) | Increasing rate of accumulative pore volume (%) | mesopore volume (cc/g) | Increasing rate of mesopore volume (After coating/ before coating) (%) | BET specific surface area (m ² /g) | σ/D | R | H/C | Oxidation corrosion rate Wt% | Electrolytic solution | Discharge capacity mAh/g | Residual capacity rate (%) (Discharge capacity (-5°C)/ Discharge capacity (25°C)) | Initial efficiency (%) | Irreversible capacity mAh/g |
|----------------|-------------------------------|---|------------------------|--|---|------------|------|--------|------------------------------|-----------------------|--------------------------|---|-------------------------|-----------------------------|
| Ex. 1 | 5 | 30.5 | 0.0051 | 28.3 | 2.3 | 0.012 | 0.34 | < 0.01 | 2.96 | EC/DMC | 358 | - | 92.1 | 28.2 |
| Ex. 2 | 2 | 9.3 | 0.0083 | 46.1 | 3.0 | 0.015 | 0.37 | < 0.01 | 1.81 | EC/DMC | 358 | - | 90.4 | 38.1 |
| Ex. 3 | 8 | 10.7 | 0.0060 | 33.3 | 2.5 | 0.0085 | 0.35 | < 0.01 | 3.53 | EC/DMC | 354 | - | 91.1 | 34.5 |
| Ex. 4 | 8 | 10.7 | 0.0060 | 33.3 | 2.5 | 0.0085 | 0.35 | < 0.01 | 3.53 | EC/PC | 360 | - | 89.2 | 43.6 |
| Ex. 5 | 5 | 11.5 | 0.0083 | 29.5 | 3.1 | 0.011 | 0.34 | < 0.01 | 2.84 | EC/DMC | 360 | - | 93.2 | 26.3 |
| Ex. 6 | 5 | 15.3 | 0.0055 | 20.9 | 1.6 | 0.008 | 0.34 | 0.2 | 2.77 | EC/DMC | 365 | - | 93.4 | 25.9 |
| Ex. 7 | 5 | 30.5 | 0.0051 | 28.3 | 2.3 | 0.012 | 0.34 | < 0.01 | 2.96 | EC/DEC | 364 (25°C) 311 (-5°C) | 85.6 | 93.3 (25°C) 81.3 (-5°C) | 26.0 (25°C) 71.8 (-5°C) |
| Compara. Ex. 1 | 1 | 0.2 | 0.0135 | 75.0 | 3.7 | 0.018 | 0.20 | < 0.01 | 0.13 | EC/DMC | 357 | - | 87.4 | 51.3 |
| Compara. Ex. 2 | 23 | -13.2 | 0.0055 | 30.6 | 1.7 | 0.007 | 0.51 | < 0.01 | 19.9 | EC/DMC | 340 | - | 90.8 | 37.2 |
| Compara. Ex. 3 | 5 | 17.4 | 0.0050 | 27.8 | 2.6 | 0.012 | 0.47 | 0.02 | 1.00 | EC/DMC | 361 | - | 85.2 | 62.5 |
| Compara. Ex. 4 | 5 | 21.4 | 0.0063 | 35.0 | 2.4 | 0.012 | 0.12 | < 0.01 | 0.13 | EC/DMC | 357 | - | 87.6 | 50.4 |
| Compara. Ex. 5 | 5 | 21.4 | 0.0063 | 35.0 | 2.4 | 0.012 | 0.12 | < 0.01 | 0.13 | EC/PC | 321 | - | 20.8 | 1,222.3 |
| Compara. Ex. 6 | 5 | 21.8 | 0.0202 | 23.2 | 7.6 | 0.032 | 0.31 | < 0.01 | 2.13 | EC/DMC | 350 | - | 80.0 | 87.5 |
| Compara. Ex. 7 | 0 | - | 0.0180 | - | 5.4 | 0.014 | 0.18 | < 0.01 | 0.26 | EC/PC | 361 | - | 82.2 | 78.2 |
| Compara. Ex. 8 | 0 | - | 0.0180 | - | 5.4 | 0.014 | 0.18 | < 0.01 | 0.26 | EC/DEC | 365 (25°C) 246 (-5°C) | 67.4 | 91.9 (25°C) 61.1 (-5°C) | 32.2 (25°C) 154.6 (-5°C) |

